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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/760,141

01/16/2004

Brian Farnworth

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08/15/2007

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EXAMINER

DESAL, ANISH P

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1771

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/760,141

Applicant(s)

FARNWORTH, BRIAN

Examiner

Anish Desai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on 06/14/07 after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/14/07 has been entered.
2. Claims 1-49 are pending. Claims 1-26 are withdrawn. Support for newly amended claim is found in the specification.
3. The art rejection based on Garbuio (US 3,925,916) is withdrawn in view of the present amendment and response because Garbuio does not teach or suggest porous material selected from the group consisting of fumed metal oxide and aerogel.
4. The art rejections based on Kuznetz (US 4,813,160) in view of Smith et al. (US 5,877,100) are withdrawn in favor of anew ground of rejection based on Kuznetz (US 4,813,160) in view of Smith et al. (US 5,877,100) and Giese et al. (US 4,005,532).
5. The obviousness type double patenting rejection is maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 27-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 27 and 30 recite "more than one section of structure material within the envelope to provide flexibility for shaping". It is not clear as to what is meant by "more than one section of structure material". The specification does not provide any guidance as to what is meant by "more than one section of structure material". Does Applicant want to convey that the structure material (i.e. compressed mixture comprising fumed metal oxide or aerogel) is provided throughout the gas impermeable envelope to facilitate the shaping of the insulating structure? Since claims 28-29 and 31-49 depend from the rejected claims 27 and 30 respectively, these claims are rejected as well. For the purpose of the examination any reference disclosing a gas impermeable envelope having a mixture as recited in claims 27 and 30; wherein the envelope is evacuated and sealed will read on claim requirement of "more than one section of structure material within the envelope to provide flexibility for shaping".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 27-32 and 36-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuznetz (US 4,813,160) in view of Smith et al. (US 5,877,100) and Giese et al. (US 4,005,532).

Kuznetz discloses an insulating component (claims 29 and 30). Further, Kuznetz discloses an athletic shoe that is so insulated as to minimize heating of a foot

housed therein as a result of solar radiation and heat conduction from ground (column 1, lines 7-16). The shoe of Kuznetz as shown in Figure 2 discloses toe cap area, a boot upper and a boot sole. Further, Kuznetz discloses an insert 13 formed of a thermal insulating material that is sandwiched between the inner and the outer soles (column 3 lines 52-55). Applicant's claims require a method of insulating a boot comprising providing a boot having toe cap area, a boot upper and a boot sole. The invention of Kuznetz discloses this limitation.

Kuznetz is silent with respect to teaching "providing a mixture comprising a porous material...providing the shaped insulating structure to at least one of the...shaped insulating structure having a thermal conductivity of...25°C.". However, Smith discloses insulation bodies such as a vacuum panel (column 1 lines 5-7 and lines 21-23) that have improved thermal conductivities (column 1 lines 59-60). It is noted that the secondary reference of Smith is not in the same field of endeavor as the applicant's claimed invention (i.e. method of insulating a boot). However it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, presently claimed invention is trying to provide an insulating component for apparel (e.g. boot) that has greater insulation than conventional insulating material without substantially changing fit or appearance of the apparel (page 3, lines 24-26 of specification as filed on 01/16/04). The reference of Smith also provides composition and insulation body

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comprising said composition which has improved thermal conductivity and further the thickness of the vacuum insulation panel (insulation body) can be as thin as 3 mm (column 12, lines 50-53), which would make it suitable for use in applications such as shoe of Kuznetz which desires a thin insulating insert (column 2, lines 59-60) with reasonable expectation of success. Therefore, Smith reference is analogues art.

The insulation body of Smith comprises a porous particulate composition such as aerogels, xerogels, and metal oxide gels (column 1 lines 58-66, column 4 lines 64-67 and column 6 lines 7-15), which reads on providing a mixture comprising a porous material selected from fumed metal oxide and aerogel as claimed. Further Smith discloses that if desired the composition of the present invention may be placed in a porous pouch and pressed to a desired shape prior to placement in the substantially gas impermeable and substantially water impermeable membrane closure (column 11 lines 64-65 and column 12 lines 1-2), which reads on compressing the mixture to form a structure material and placing the structure material in a gas impermeable envelopes as claimed. According to Smith, generally the substantially gas impermeable barrier enclosure employed in the vacuum insulation has one or more opening permitting the evacuation of the enclosure (column 12 lines 63-67). Smith further discloses that the bag is first evacuated at low pressure and the manufacturing process is then terminated by heat-sealing the enclosure (column 13 lines 1-6). This reads on evacuating and sealing the envelope to form a flat insulating structure, the flat insulating structure comprising more than one section of structure material within the envelope to provide flexibility for shaping as claimed. As to the claim requirement of shaping the flat

insulating structure into a shaped insulating structure, as previously noted Smith discloses shaping of the particulate composition into a desired shape at column 11 lines 64-67.

Although Smith does not explicitly disclose the thermal conductivity of the shaped insulating structure as claimed. It is reasonable to presume that the shaped insulating structure of Smith has the claimed thermal conductivity. The support for said presumption is based on the fact that the shaped insulating structure of Smith and Applicant is formed of similar process and materials. The process of forming the shaped insulation material of presently claimed invention and that of Smith is previously disclosed. Additionally, the shaped insulating structure of Applicant comprises a porous material contained in a gas impermeable envelope. Further the porous material of Applicant can be selected from aerogel and fumed metal oxide. Smith also discloses a porous material such as silica gels, aerogels, metal oxides (column 6, lines 7-15) that are enclosed in a gas impermeable barrier (e.g. pouch) that is formed of metallized polymeric materials and metal foil laminates (column 11, lines 11-18). It is noted that the gas impermeable envelope of Applicant is formed of metal (specification page 6). Further, the gas impermeable envelopes of Applicant and Smith are evaluated at reduced pressure and sealed. Therefore, the shaped insulating structure of Applicant and Smith are structurally and compositionally equivalent. Therefore, the presently claimed property of thermal conductivity would have been present. The burden is shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594).

It is noted that the reference of Smith provides composition and insulation body comprising said composition which has improved thermal conductivity and further the thickness of the vacuum panel (insulation body) of Smith can be as thin as 3 mm, which would make it suitable for use in application such as shoe of Kuznetz which desires a thin insulating insert (column 2 lines 59-60) with reasonable expectation of success. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the vacuum panel of Smith as a thin insulating insert in the invention of Kuznetz, motivated by the desire to provide an insulating insert with improved thermal conductivity.

Kunetz as modified by Smith is silent as to teaching of the flat insulating structure is formed in the form of a toe cap. However, Giese discloses an insulated insole. Further, Giese discloses that this particular construction of the insole to form the toe cap and the upstanding portions engaging the inner sides of the shoe in the heel and arch area provides insulation where most needed, namely the toe area to protect the toes of the wearer which are the portions of the foot most sensitive to cold (column 2 lines 27-35). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the flat insulating structure in the form of a toe cap, motivated by the desire to provide the insulation to the toe cap area which is the most sensitive to cold as taught by Giese.

As to the claim requirement of shaped insulating structure is positioned between the inner and the outer boot layers and the shaped insulating structure is affixed to an inner boot layer and adjacent to a wearer of the boot, Figure 3 of Kuznetz discloses the

insulating insert 13 that is positioned between the inner sole layer and the outer sole layer and it is affixed to the outer sole layer 12 and adjacent to a wearer of the boot. As to the claim requirement of flat insulating structure-having loss of thickness of 20% or less at a pressure of 1 atm. The loss of thickness of 20% or less includes zero. It is noted that the secondary reference of Smith is silent with respect to teaching loss of thickness thus reads on the claim requirement. Regarding claim limitation of gas impermeable envelope is under a vacuum pressure of upto about 10,000 Pa, or about 1000 Pa or less, it is noted that Smith discloses evacuating the air from the gas impermeable envelope at low pressure, for example at 133.2322 to 1,333.22 Pa (column 13 lines 1-6). With respect to the claim requirement of the thickness of the flat insulating structure, it is noted that the primary reference of Kuznetz desires a thin insulating insert (see abstract) but it is silent with respect to teaching of suitable thickness of the insert. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the insulating insert of Smith with the thickness as claimed, motivated by the desire to provide an insulating insert that is thin but adequately insulates the shoe.

8. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuznetz (US 4,813,160) in view of Smith et al. (US 5,877,100) and Giese et al. (US 4,005,532) as applied to claim 30 above, and further in view of Okoroafor et al. (US 5,691,392).

It is noted that Kuznetz is silent with respect to teaching porous material is fumed silica. However, Okoroafor discloses a stable particulate composition. According to

Okoroafor, when the stable particulate dispersion of this invention are used as additive to enhance the thermal insulation performance of foams, the preferred particulate material is silica. According to Okoroafor, classes of silica that may be used are for example silica aerogels, fumed silica etc. (column 6 lines 44-57). It is noted that the primary reference of Kuznetz discloses particulate materials such as silica aerogels. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute fumed silica of Okoroafor in place of silica aerogel in the invention of Kuznetz, because these two materials are shown to be art recognized equivalent for the purpose of providing insulation.

9. Claims 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuznetz (US 4,813,160) in view of Smith et al. (US 5,877,100) and Giese et al. (US 4,005,532) as applied to claim 30 above, and further in view of Holman et al. (US 6,045,718).

It is noted that Kuznetz is silent with respect to teaching porous material is fumed alumina. However, Holman discloses microporous insulation for data recorders. The microporous insulation material of Holman contains inorganic particulate material, endothermic compounds, optionally an opafier, inorganic fiber and preferably a dry resin or other binder (abstract). The inorganic material can comprise only hydrophilic material or both hydrophilic and hydrophobic material (abstract). Holman discloses inorganic material such as fumed alumina (column 3 line 59). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the fumed alumina in the invention of Kuznetz as modified by Smith and Giese, motivated

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by the desire to enhance the insulating characteristics of the shaped insulating structure.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 27-29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-34 of copending Application No. 11/106,788 in view of Garbuio (US 3,925,916) substantially as set forth in the previous Office Action.

Response to Arguments

11. Applicant's arguments in response to the Office action dated 12/14/06 have been fully considered but they are moot in view of the new ground of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth M. Cole/
Primary Examiner,
Art Unit 1771

/A. D./
APD